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Supporting Information



Fig. S1 The high-resolution SEM image of FM-HPCF sample.



Fig. S2 The (a) $N_{\rm 2}$ adsorption-desorption isotherms and (b) BJH pore size distribution of HPCF.



Fig. S3 (a) Electrochemical impedance spectra (EIS) and (b) partially enlarged EIS of FM-HPCF, M-HPCF and bulk MoS_2 .

 Table S1 Comparisons of selected performance metrics of MoS2 SIBs electrodes.

| Specific capacity | Current density | Number of | Ref. |
|------------------------|--|--|---|
| (mAh g ⁻¹) | (mA g⁻¹) | cycles | |
| 400 | 500 | 300 | [22] |
| 240 | 1000 | 500 | [25] |
| 342 | 100 | 100 | [26] |
| 337 | 1000 | 300 | [27] |
| 253 | 3000 | 4500 | [36] |
| 339 | 500 | 300 | [44] |
| 245 | 1000 | 1300 | [45] |
| 309 | 1000 | 1000 | [51] |
| 490 | 100 | 50 | [52] |
| 637 | 50 | 50 | [54] |
| 443 | 1000 | 500 | [56] |
| 445 | 100 | 50 | [58] |
| 509 | 1000 | 250 | [60] |
| 380 | 20000 | 100 | [62] |
| 413 | 100 | 100 | [65] |
| 491 | 100 | 50 | This work |
| 234 | 1000 | 3000 | This work |
| | Specific capacity (mAh g ⁻¹) 400 240 342 337 253 339 245 309 490 637 443 445 509 380 413 491 234 | Specific capacity Current density (mAh g ⁻¹) (mA g ⁻¹) 400 500 240 1000 342 100 337 1000 253 3000 339 500 339 500 245 1000 309 1000 443 100 637 50 443 100 443 100 445 100 443 20000 443 100 443 100 443 100 443 100 443 100 443 100 443 100 443 100 443 100 443 100 443 100 443 100 443 100 443 100 443 100 443 100 | Specific capacity Current density Number of (mAh g ⁻¹) (mA g ⁻¹) cycles 400 500 300 240 1000 500 342 100 100 337 1000 300 253 3000 4500 339 500 300 245 1000 1300 309 1000 100 443 1000 50 443 1000 50 443 1000 50 443 100 50 443 100 50 509 1000 100 443 100 50 443 100 50 443 100 50 443 100 50 443 100 50 443 100 50 443 100 50 443 100 50 443 |